Annual Drinking Water Quality Report for Lajes Field

(1 January 2010 – 31 December 2010)
(updated each June)

We are pleased to present this year's Annual Water Quality Report. This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality.

Our water source is groundwater that is pumped from multiple active wells that come from deep aquifers. The water is treated before entering the distribution system with a disinfectant to protect against microbial organisms. Additionally, the water is treated through a nano-filtration system to improve water quality. The 65th Civil Engineering Squadron maintains the water distribution system and its treatment process.

The sources of all drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. In order to ensure that tap water is safe to drink, regulations limit the amount of certain contaminants in water provided by public water systems. Other regulations establish limits for contaminants in bottled water, which generally must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency (EPA) and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

One sample at Building T-709 in April 2010 indicated an elevated level of iron. Iron may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. Re-sampling in May 2010 was accomplished and all regulatory requirements were met. No elevated levels for iron have been found since then at any location.

In addition, some problems were detected last year with elevated lead levels at the school and the CDC. Upon discovery that certain taps were above the maximum contaminant level (MCL), all of the affected taps were removed from service until filters were added and re-sampling verified levels were below the MCL. Several taps remain out of service until additional results from re-sampling are available.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The potential adverse health effects for prolonged consumption of water with lead contamination above the action level are different depending on the age of the consumer. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development or show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Lead in drinking water is primarily from materials and components associated with service lines and plumbing. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

For more information, please contact Capt Mark Paine or SSgt Brent Jnofinn at 295-57-6206 or DSN 535-6206. Copies of this report are available upon request at the Bioenvironmental Engineering Office which is located in Building T-425.

The tables in this report represent the contaminants that were sampled for during the past year. Also, the table below contains some helpful terms and abbreviations.

Important Drinking Water Definitions

Term	Definition
MCLG	Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MFL	Million Fibers per Liter (MFL): is a measure of the presence of asbestos fibers that are longer than 10 micrometers.
mSv/yr	mSv/yr: measure of radiation absorbed by the body

TESTING AND ANALYSIS RESULTS

Microbiological Contaminants

Contaminant	Violation Y/N	Level Detected	MCLG	MCL	Unit Measurement	Likely Source of Contamination
1. Total Coliform Bacteria	N	Absent	0	Presence of coliform bacteria in 5% of monthly samples	Present/ Absent	Naturally present in the environment
2. Fecal coliform and *E. Coli*	N	Absent	0	A routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive	Present/ Absent	Human and animal fecal waste

Radioactive Contaminants

Contaminant	Violation Y/N	Level Detected	MCLG	MCL	Unit Measurement	Likely Source of Contamination
3. Total Alpha	N	<0.07	0	0.1	Bq/L	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation
4. Total Beta	N	<0.08	0	1.0	Bq/L	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation
5. Tritium	N	<10	0	50	Bq/L	Erosion of natural deposits
6. Total indicative dose	N	0.030	0	0.10	mSv/yr	Erosion of natural deposits

Inorganic Contaminants

Contaminant	Violation Y/N	Level Detected	MCLG	MCL	Unit Measurement	Likely Source of Contamination
7. Aluminum	N	<0.06	n/a	0.2	mg/L	Erosion of natural deposits
8. Ammonium	N	<0.05	n/a	0.5	mg/L	Erosion of natural deposits
9. Antimony	N	<0.002	0.006	0.005	mg/L	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
10. Arsenic	N	<0.002	0	0.01	mg/L	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
11. Asbestos	N	<0.17	7	7	MFL	Decay of asbestos cement water mains; erosion of natural deposits
12. Barium	N	0.005	2	2	mg/L	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
13. Beryllium	N	<0.0002	0.004	0.004	mg/L	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries

Microbiological Contaminants

Contaminant	Violation Y/N	Level Detected	MCLG	MCL	Unit Measurement	Likely Source of Contamination
14. Boron	N	<0.2	1	1	mg/L	Erosion of natural deposits
15. Bromate	N	<0.005	0	0.010	mg/L	Disinfection byproducts form when disinfectants added to drinking water to kill germs react with naturally-occurring organic matter in water
16. Cadmium	N	<0.0004	0.005	0.005	mg/L	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
17. Chlorides	N	53	250	250	mg/L	Disinfection byproducts form when disinfectants added to drinking water to kill germs react with naturally-occurring organic matter in water
18. Chromium	N	0.01	0.05	0.05	mg/L	Discharge from steel and pulp mills; erosion of natural deposits
19. Copper	N	0.25	1.3	1.3	mg/L	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
20. Cyanide	N	<0.01	0.05	0.05	mg/L	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
21. Fluoride	N	0.4	1.5	1.5	mg/L	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
22. Iron	**Y**	**0.518**	**n/a**	**0.2**	**mg/L**	**Naturally in rivers, lakes, and underground water**
23. Lead	**Y**	**0.056**	**0**	**0.015**	**mg/L**	**Corrosion of household plumbing systems, erosion of natural deposits**
24. Manganese	N	0.015	n/a	0.05	mg/L	Sources of pollution rich in organic matter can add to the background level by increasing manganese release from soil or bedrock into groundwater.
25. Mercury (inorganic)	N	<0.0005	0.001	0.001	mg/L	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
26. Nickel	N	0.005	0.02	0.02	mg/L	Erosion of natural deposits
27. Nitrate (as Nitrogen)	N	29	50	50	mg/L	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
28. Selenium	N	0.002	0.01	0.01	mg/L	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
29. Sodium	N	58	n/a	200	mg/L	Erosion of natural deposits as water moves through soil and rock
30. Sulfate	N	52	n/a	250	mg/L	Erosion of natural deposits as water moves through soil and rock
31. Thallium	N	<0.0002	0.0005	0.002	mg/L	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
32. Zinc	N	<0.05	3.0	3.0	mg/L	Erosion of natural deposits

Synthetic Organic Contaminants (including Pesticides and Herbicides)						
Contaminant	**Violation Y/N**	**Level Detected**	**MCLG**	**MCL**	**Unit Measurement**	**Likely Source of Contamination**
33. 2,4-D	N	<0.00001	0.0001	0.0001	mg/L	Runoff from herbicide used on row crops
34. 2,4,5-TP (Silvex)	N	<0.00001	0.0001	0.0001	mg/L	Residue of banned herbicide
35. Alachlor	N	<0.00001	0	0.0001	mg/L	Runoff from herbicide used on row crops
36. Aldrin	N	<0.00001	n/a	<0.00003	mg/L	Runoff from insecticides
37. Aldicarb	N	<0.00001	n/a	0.0001	mg/L	Runoff from herbicide used on row crops
38. Aldicarb Sulfone	N	<0.00001	n/a	0.0001	mg/L	Runoff from herbicide used on row crops
39. Aldicarb Sulfoxide	N	<0.00001	n/a	0.0001	mg/L	Runoff from herbicide used on row crops
40. Atrazine	N	<0.00001	0.0001	0.0001	mg/L	Runoff from herbicide used on row crops
41. Benzo(a)pyrene (PAH)	N	0.000005	0	0.0001	mg/L	Leaching from linings of water storage tanks and distribution lines
42. Benzo(b)fluoranthene	N	0.00002	n/a	0.0001	mg/L	Leaching from linings of water storage tanks and distribution lines
43. Benzo(ghi)perylene	N	0.00002	n/a	0.0001	mg/L	Leaching from linings of water storage tanks and distribution lines
44. Benzo(k)fluoranthene	N	0.00002	n/a	0.0001	mg/L	Leaching from linings of water storage tanks and distribution lines
45. Carbofuran	N	<0.00001	0.0001	0.0001	mg/L	Leaching of soil fumigant used on rice and alfalfa
46. Chlordane	N	<0.00001	0	0.0001	mg/L	Residue of banned termiticide
47. Dalapon	N	<0.0001	0.0001	0.0001	mg/L	Runoff from herbicide used on rights of way
48. Deildrin	N	<0.00001	n/a	0.00003	mg/L	Runoff from insecticides
49. Di(2-ethylhexyl) - adipate	N	<0.00001	0.4	0.4	mg/L	Discharge from chemical factories
50. Di(2-ethylhexyl) - phthalate	N	<0.00013	0	0.006	mg/L	Discharge from rubber and chemical factories
51. Dibromochloropropan	N	<0.00001	0	0.0001	mg/L	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
52. Dinoseb	N	<0.00001	0.0001	0.0001	mg/L	Runoff from herbicide used on soybeans and vegetables
53. Diquat	N	<0.00001	0.0001	0.0001	mg/L	Runoff from herbicide use
53. Endothall	N	<0.00001	0.0001	0.0001	mg/L	Runoff from herbicide use
54. Endrin	N	<0.00001	0.0001	0.0001	mg/L	Residue of banned insecticide
55. Glyphosate	N	<0.00001	0.0001	0.0001	mg/L	Runoff from herbicide use

Synthetic Organic Contaminants (including Pesticides and Herbicides)						
Contaminant	**Violation Y/N**	**Level Detected**	**MCLG**	**MCL**	**Unit Measurement**	**Likely Source of Contamination**
56. Heptachlor	N	<0.00001	0	0.00003	mg/L	Residue of banned termiticide
57. Heptachlor epoxide	N	<0.00001	0	0.00003	mg/L	Breakdown of heptachlor
58. Hexachlorobenzene	N	<0.00001	0	0.0001	mg/L	Discharge from metal refineries and agricultural chemical factories
59. Hexachlorocyclo- pentadiene	N	<0.00001	0.0001	0.0001	mg/L	Discharge from chemical factories
60. Lindane	N	<0.00001	0.0001	0.0001	mg/L	Runoff/leaching from insecticide used on cattle, lumber, gardens
61. Methoxychlor	N	<0.00001	0.0001	0.0001	mg/L	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
62. Oxamyl [Vydate]	N	<0.00001	0.0001	0.0001	mg/L	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
63. PCBs [Polychlorinated biphenyls]	N	<.0000011	0	0.0001	mg/L	Runoff from landfills; discharge of waste chemicals
64. Pentachlorophenol	N	<0.00001	0	0.0001	mg/L	Discharge from wood preserving factories
65. Picloram	N	<0.00001	0.0001	0.0001	mg/L	Herbicide runoff
66. Simazine	N	<0.00001	0.0001	0.0001	mg/L	Herbicide runoff
67. Toxaphene	N	<0.0001	0	0.0001	mg/L	Runoff/leaching from insecticide used on cotton and cattle
68. Total Pesticides	N	<0.00003	n/a	0.0005	mg/L	Runoff/leaching from herbicide and pesticides used on row crops

Synthetic Organic Contaminants (including Pesticides and Herbicides)						
Contaminant	**Violation Y/N**	**Level Detected**	**MCLG**	**MCL**	**Unit Measurement**	**Likely Source of Contamination**
69. Benzene	N	<0.0002	0	<0.001	mg/L	Discharge from factories; leaching from gas storage tanks and landfills
70. Carbon tetrachloride	N	<0.0005	0	0.005	mg/L	Discharge from chemical plants and other industrial activities
71. Chlorobenzene	N	<0.0005	0.1	0.1	mg/L	Discharge from chemical and agricultural chemical factories
72. 1,2 – Dichloroethane	N	<0.00075	0	0.003	mg/L	Discharge from industrial chemical factories
73. Ethylbenzene	N	<0.0005	0.7	0.7	mg/L	Discharge from petroleum refineries
74. PCE	N	<0.0005	0	0.001	mg/L	Discharge from dry cleaners
75. Styrene	N	<0.0005	0.1	0.1	mg/L	Discharge from rubber and plastic factories; leaching from landfills
76. 1,2,4 - Trichlorobenzene	N	<0.0005	0.07	0.07	mg/L	Discharge from textile-finishing factories
77. 1,1,1- Trichloroethane	N	<0.0005	0.2	0.2	mg/L	Discharge from metal degreasing sites and other factories
78. 1,1,2 – Trichloroethane	N	<0.0005	0.003	0.005	mg/L	Discharge from industrial chemical factories
79. TTHM, Total trihalomethanes	N	<0.0026	n/a	0.10	mg/L	Disinfection byproducts form when disinfectants added to drinking water to kill germs react with naturally-occurring organic matter in water
80. Toluene	N	<0.0005	1	1	mg/L	Discharge from petroleum factories
81. Vinyl Chloride	N	<0.0004	0	0.0005	mg/L	Leaching from PVC piping; discharge from plastics factories
82. Xylenes	N	<0.0005	10	10	mg/L	Discharge from petroleum factories; discharge from chemical factories

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference – try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water usage!
- Visit www.epa.gov/watersense for more information.

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- Dispose of chemicals properly; take used motor oil to a recycling center.